

ICT and Youth in Agriculture: Perspectives from Nigeria

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ABSTRACT

In general, lack of basic policy support is one of the numerous reasons the agricultural sector is by tradition not prevalent among youth in Nigeria. However, innovations in the usage of ICT can no doubt contribute to improving this situation. ICT can help increase value chains, provide new employment opportunities, and attract more young people to the sector. Additionally, to accelerate the involvement of more youth in agriculture, there is a need to provide cheaper and more reliable access to ICT devices and connectivity since ICT entrepreneurship and innovation development in the agricultural sector is a recent development that offers new employment opportunities to African youth. The need therefore arise to strengthen ICT use in agriculture by public and private institutions through awareness creation and capacity building. This can be achieved by improving equipment in ways that enhance work environments and make them more conducive to innovations by youth seeking a to become agriprenuers

Keywords: ICT, Development, Agriculture, Finance.

1.0 INTRODUCTION

Agriculture is a major economic activity and spring of livelihoods for inhabitants of sub-Saharan Africa. It presently contributes approximately 32% of the region's GDP (Oluoch-Kosura, 2013). In Africa, agriculture still remain till date an important and viable sector for development and prosperity. However, subsistence farming by smallholders is still the main source of agriculture and food production in Nigeria and Africa at large. Interestingly, agriculture is seen by youth as a strenuous, low output, and drudgery-filled profession that is not lucrative enough and cannot be depended upon for a sustainable livelihood (YPARD, 2011). The use of information and communication technologies (ICTs) is fostering growth in the agricultural scene in Africa. This is helping to bring youth into agriculture as well as retaining young famers who are already operating in the sector.

In this study, we evaluate the current status and relevance of ICT use by youth (aged between 15 and 35 years) in the agricultural sector in Africa, with specific focus on the linkages between ICTs and the present realities (benefits) and future trends of youth involvement in agriculture in the region. We also discussed the inherent challenges and opportunities in providing support for increased ICT use by youth will also be assessed and policy recommendations will be put forward to decision makers and other stakeholders.

2. RELATED WORKS

Ajilore, (2014) pointed out on how mobile phone and mobile device is now widely used in Africa. He emphasized that SMS is a messaging service of the web or mobile phones that enables users to exchange short text messages with their devices. SMS is hugely popular, in Africa and globally concluding that many innovative ICTs motivation of youths towards agriculture in Africa can be SMS-based.

In 2015, Ajilore in another study mentioned that videos have been traditionally used in Africa to disseminate agro-advisory information, if required in local languages, through a variety of channels. Today, the computer, tablet or mobile phone can be used to watch online videos via websites like YouTube and Access Agriculture. He further mentioned that dedicated TV programs for (young) farmers, such as the ‘Shamba Shape-Up’ TV show in Kenya, are available in some countries. Again, it was captured that the radio is perhaps one of the most effective ways to pass information (notably in local languages) to farmers and rural households in most developing countries, whether in Africa or elsewhere provided the content of the message is packaged in an appealing way (Chapman, et al., 2003; Farm Radio International, 2008; Nakabugu, 2001). Agricultural audio files and programs can be downloaded from the Internet on many websites.

The Social media which is defined as electronic information and communication platforms that enable users to easily create and disseminate content on digital networks and engage in interactive communications are now in use for effective information-sharing tools for tech-savvy farmers, especially youth.

- billion – estimated population of Africa
- 35% – proportion of total African population classified as youth (aged 15-35 years)
- 364 million – number of African youth aged 15-34 years
- 10 million – minimum number of African youth entering the labor market each year
- 65% – percentage of Africans engaged in agriculture
- 60% – percentage of unemployed youth in Africa
- 69% – proportion of Africans with a mobile phone subscription as of 2014
- 90% – percentage of young farmers using ICTs for agricultural activities (based on a survey done in western Kenya)

Figure 1: Facts on: Agriculture, Youths and ICT in Africa

2.1 The Potential Of Ict For Agriculture’s Value Chain

Farm productivity can no doubt be increased massively through the application of ICT. This can be achieved if it supports the efficient use of key farm resources such as fertilizers, water and land. This fact was buttressed by a World Bank study (2011), that farmers can now use ICT tools to manage their farming activities, from crop selection to the monitoring of production. The days of waiting for intermittent agro-advisory services from overloaded extension agents are over, this is because African farmers and agripreneurs can now obtain needed information, such as weather forecasts and output market prices, directly on their mobile devices. Iboma (2014), said that ICTs can also be used to find the best locations and prices of such inputs as seed and fertilizers. In Nigeria, for example, the government’s e-wallet program, which leverages farmers’ access to mobile phones, enables farmers to obtain subsidized inputs that raise their productivity.

3. ADVANCEMENT IN MARKETING AND TRADE

Marketing remains one sector that enjoys a lot of patronage through the use of ICT in Africa today. ICT is often now used to define market prices and gives access to markets for bargaining and transactions either to send or receive money. Having up-to-date market information on commodity and input prices, as well as demand trends, boosts farmers' negotiating positions and informs decisions about when and where to buy and sell, what to produce, and the quantity and quality of future production (Stienen, et al., 2007).

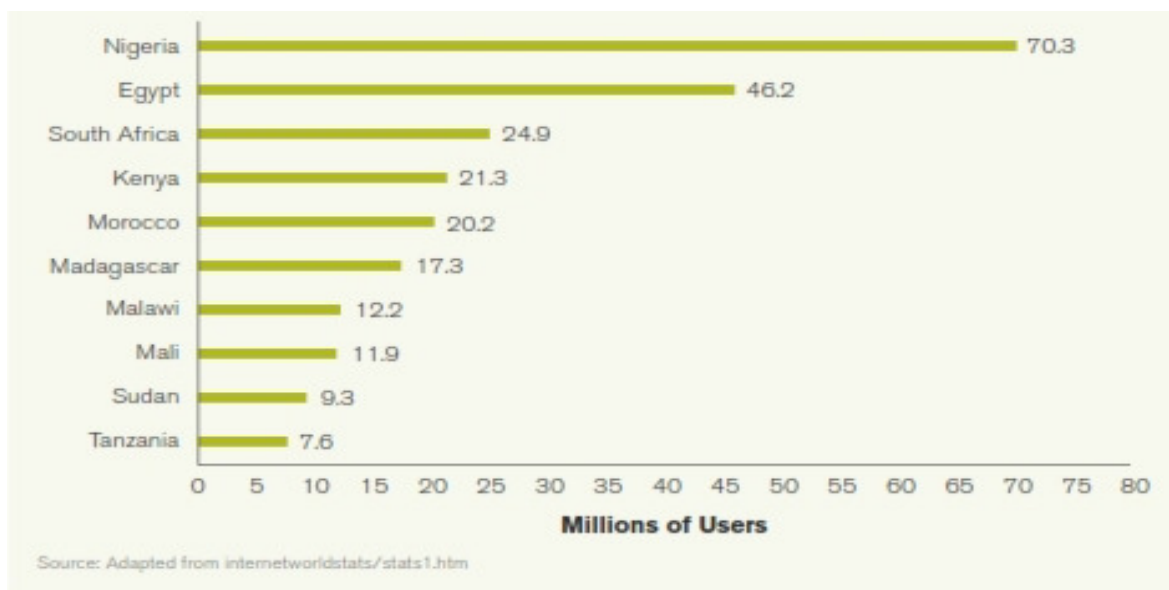


Fig. 2: Africa's Top 10 Internet Countries, Q2 2014

In order for increase reduction in marketing logistics and transportations, ICT can also be leveraged. This increase in profitability can be achieved by enabling every farmers' capability to shape themselves into groups in view of achieving and leveraging the economies of scale. This cluster in groups will result in the marketing of larger volumes thereby increasing access of bulk buyers and increase collective and individual profits. Many ICT applications that help farmers connect to markets abound in Africa. Examples include Esoko in Ghana and other countries, e-Soko in Rwanda, Google Trader and Infotrade in Uganda, M-Farm and OLX in Kenya, and nanoCredit in South Africa.

3.2 Improved Access And Finance

In Africa, one of the challenges entrepreneurs and other business owner have had to always battle with is inadequate access to finance for getting more inputs or commercialize their businesses more. This is always prevalent in agriculture in the continent as a whole. However, access and management of agricultural finance can be well handled with the novelty intrinsic with ICT. Although, such steps have been taken in making access to finance for young farmers easier, more can be achieved if fundraising from the public via ICT platforms, nicknamed 'crowdfunding', which is also penetrating the African agricultural sector can gain more popularity and acceptance. Operated notably through Internet platforms such as Kiva, this practice is emerging as an innovative alternative modality to mobilize agricultural finance.

Additionally, in the case of the e-wallet program in Nigeria, ICT access enables farmers registered in the scheme to obtain vouchers that provide a 50% subsidy for their input purchases (Iboma, 2014). Agricultural insurance is also one area which ICT can drive more people into farming in the region. It's now easier to verify assertions for weather-related losses through the use of ICT. Lastly, it is also worthy of note that additional crosscutting uses of ICTs in agriculture are related to records management and the management of farmer organizations.

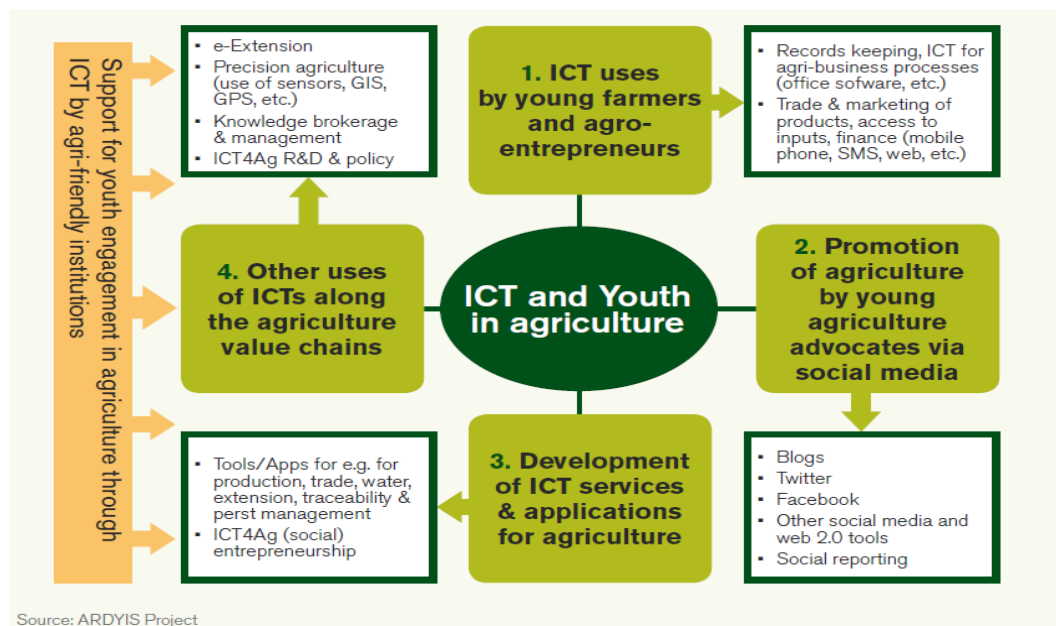


Figure 3: Framework for engaging youth in agriculture through ICTs

3.3 Youth And Precision Agriculture

These days, there is a heavy dependence on ICT for site-specific crop management or precision agriculture which is a new form of agricultural management. The use of these technologies includes: observation, measurement and responds to possible variability within individual fields. Precision agriculture leverages on hi-tech solutions such as digital mapping of soil to determine suitability, detection of weed growth in 3D images, and GPS-enabled farming equipment to better match farm practices to crop needs and improve resource use efficiency (Zhang, et al., 2009; Piron, et al., 2010). Since young people have the quick ability to exploit ICTs, this new brand of practice can well be beseeched to advance African agriculture.

3.4 Opportunities

ICTs can be used to strengthen youth involvement in agriculture and make their participation more effective. The opportunities obtainable includes:

1. Increased awareness of ICT opportunities among agricultural organizations
2. Increased ICT penetration and affordability
3. Increased support for youth engaged in ICT for agriculture-related activities
4. Stronger interest in ICT application development in the agriculture sector
5. Emergence and growing role of ICT innovation centers (ICT hubs)

4. CONCLUSION

Agriculture is arguably the oldest economic sector in existence. By contrast, Information and communication technologies make up the newest economic sector and the technologies are developing at a rate not experienced with any previous form of technology. Despite the fact that African youth have since shown a little or no interest in agriculture, the emerging trend of applying ICT solutions to agriculture, plus the limited availability of livelihood opportunities in other sectors, are attracting an increasing number of youth back to agriculture. The energy, creativity and tech-savviness young people possess and can bring to agriculture can change the landscape of agriculture in Africa. There lies a great deal expansion of opportunities for youths in agriculture through the ease of access to ICTs and finance, capacity building, encouraging the incorporation of ICT training into agricultural curricula (at higher levels), and supporting all with the necessary infrastructure. These expansion must be the duty of governments, institutions and development organizations.

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